

**BIOSORPTION OF Pb (II) ION FROM AQUEOUS SOLUTION BY
USING MANDARIN ORANGE PEEL (*Citrus reticulata*) BIOMASS :
OPTIMIZATION STUDY**

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**Final Year Project Report Submitted in
Partial Fulfilment of the Requirement for the
Degree of Bachelor of Science (Hons.) Applied Chemistry
In the Faculty of Applied Sciences
Universiti Teknologi MARA**

MAY 2009

This Final Year Project report entitled **“Biosorption of lead (II) ions from Aqueous solution by Mandarin Orange Peels (*Citrus reticulata*)”** was submitted by Mohammad Shabarudin Bin Sulaiman in partial fulfilment of the Requirement for the Degree of Bachelor of Science (Hons.) Applied Chemistry in the Faculty of Applied Science, and was approved by



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ACKNOWLEDGEMENTS

First of all, I would like to thank the benevolent mercy and grace to Allah S.W.T for giving me the gift to complete my project successfully which have been through difficulty and hard works to handle the obstacles.

Upon completion of this project, I would like to express my gratitude to many parties. My heartfelt thanks goes to my supervisor, Assoc. Prof Kasmawati Mohamed for giving me guidance and opinions throughout this project. All the knowledge, suggestions, advices, motivation, and inspiration had encourage me to complete my task. It is pleasure to work with her with all the guidance, I appreciate it.

All the gratitude and thanks also to all the lectures and laboratory assistants, from the Faculty of Applied Sciences for their help. They had given full cooperation, guidance and useful advices to complete this project successfully. Also, million thanks to my best friend, Shaharuddin Kormin for his encouragement and patience with me throughout this project.

Then, I would like to dedicate my gratitude and deepest thanks to my mother, Sara Yasak for always being there and supportive these years. And lastly, I would like to express my sincere appreciation to all my classmates for all their help, support and concern which had made this project a success.

Mohammad Shabarudin Bin Sulaiman

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ABSTRACT

BIOSORPTION OF Pb (II) IONS FROM AQUEOUS SOLUTION BY *Citrus reticulata*

Industrialization moves so rapid that the disposal of heavy metals into the environment increases accordingly. Contamination of environmental by Pb (II) ions is a serious problem and this has led to the development of new and improved methods for treating wastewaters since available conventional methods are expensive and inefficient for removal of Pb (II) ions at low concentration. Therefore the studies on the removal of Pb (II) ions from aqueous solution were done on pH, contact time and biosorbent dose. From the studies, it were found that the optimum pH for the removal of Pb (II) ions from aqueous was determined at pH 6 with the highest percentage removal of 96.95% and uptake capacity of 0.4848 mg/g. The result showed that optimum contact time was determined at 30 minutes biosorption process with percentage removal of 97.15% with uptake capacity 0.4858 mg/g. Otherwise, it was found that 1.0 g was the optimum biosorption dose, which give highest percentage removal of 97.06% with uptake capacity 0.8487 mg/g. For biosorption of Pb (II) ions from aqueous solution by pectin-rich fruit materials, *Citrus reticulata* peels were found to be suitable and effective biosorbent.